

# Pepita Disco PPM: Margins and Elasticity

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# Demand of Labor

- Labor is a derived demand because it depends on the demand of the good in the product market



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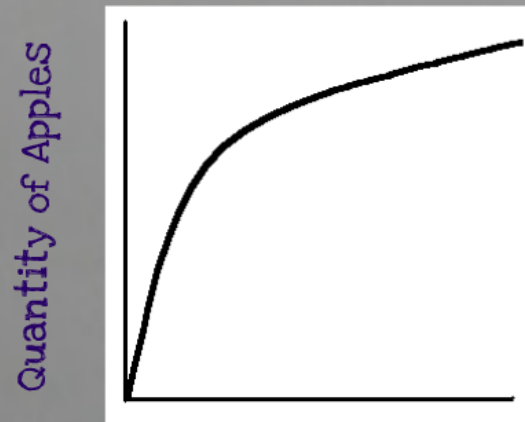
- In a competitive market, we assume that the firm is competitive in both the product markets (firm is seller of product) and factor market (firm is buyer of labor) and that it's profit maximizing, which means it only cares about profit.

$$TR - TC = \text{Profit}$$

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## Production Function

- It shows the relationship between workers and the output they produce, which is the marginal product of labor for every additional worker.



Quantity of Apple Pickers

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- **Diminishing Marginal Product:** as more workers are added, they produce less output
- **Value of Marginal Product (VMPL):** when deciding how many workers to hire, the firm considers how much extra product an additional worker will bring in - marginal product of labor
  - How to convert MPL to VMPL ->  $P \times MPL = VMPL$
  - VMPL is the demand curve because in a competitive firm, the market price is constant and the VMPL diminishes and workers increase.
  - A competitive firm hires workers until the VMPL is equal to the wage.

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## Shifts in Labor Demand

- **Output price:** when the output price of a product changes, the VMPL changes, and causes the labor demand curve to shift.
- **Technological Change:** enhances in technology increases the MPL and causes the labor demand to shift right.
- **Supply of other factors:** the availability of one factor of inputs affects the marginal productivity of all inputs, including workers

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**Example:**

In the apple market, if a fall in the supply of ladders happens, the marginal product of apple pickers will reduce, and thus the demand for apple pickers.

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# Supply of Labor

- Suppliers of labor face a tradeoff between labor and leisure. AS wages increase, opportunity cost of leisure increases.

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